

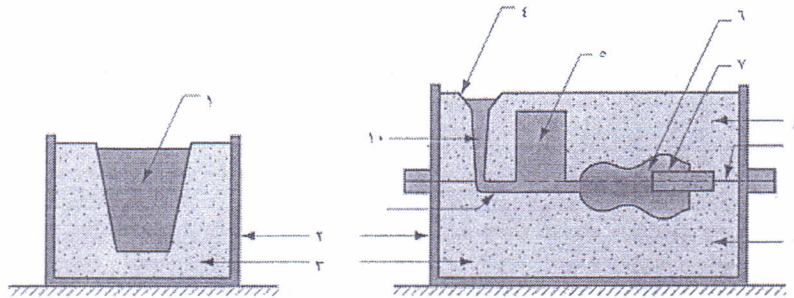


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|------------------------|--|--|
| Mansoura University |    | Level 000 |
| Faculty of Engineering | | تكنولوجيا الورش (PDE 042) |
| BME | | Time Allowed: 1 Hr. Total mark (20) |

Mid Term Exam
4/4/2019

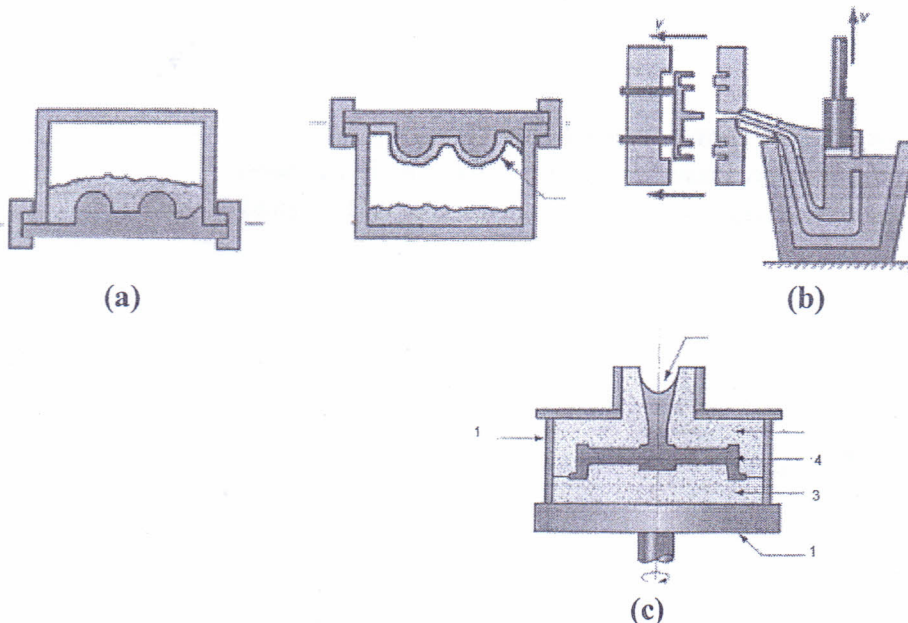
Q1- (a) Show the difference between centrifugal casting and semi centrifugal casting. (2 marks)

(b) Determine the name of process and fill the missing parts (3 marks)



(c)- (SI units) In casting experiments performed using a certain alloy and type of sand mold, it took 160 sec for a cube shaped casting to solidify. The cube was 40 mm on a side. (a) Determine the value of the mold constant in Chvorinov's rule, take $n=2$. (2 marks)

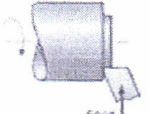
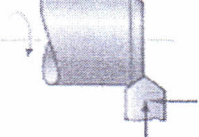
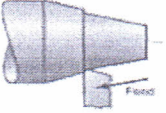
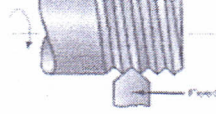
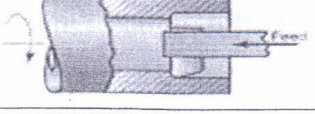
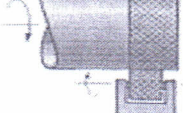
(d) write the name of the following processes and fill the numbered missing parts if founded.(4 marks)



Q2 (a) stainless steel rod of a length = 200 mm, and 16 mm diameter, is to be reduced in diameter to 13 mm by turning on a lathe in one pass. The spindle rotates at 600 rpm, and the tool is traveling at an axial speed of 180 mm/min. Calculate: (3 marks)

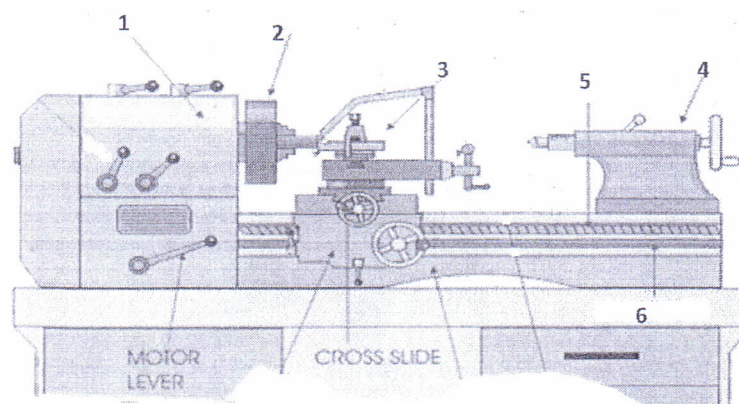
1. The cutting speed, " v "
2. Material removal rate "MRR", and
3. The time " t " required for machining the steel rod.

(b) In the following table, write the name of each Machining Process (3 marks)

| No | Machining Process | The Name of Machining Process |
|----|---|-------------------------------|
| 1 |  | |
| 2 |  | |
| 3 |  | |
| 4 |  | |
| 5 |  | |
| 6 |  | |

(c) Determine each of the following

- 1-The type of this machine shown below. (1 mark)
- 2-The type of machining processes may be carried out on it. (1 mark)
- 3-Write the name of each numbered parts of the machine (1 up to 6) (3 marks)



With our best wishes
Prof. Dr.Eng. Sami Elgayar
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